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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/786,278	03/02/2001	Jai Wook Park	05823.0194	6951

7590

01/18/2005

Finnegan Henderson Farabow Garrett & Dunner  
1300 I Street N W  
Washington, DC 20005

EXAMINER
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PRATS, FRANCISCO CHANDLER

ART UNIT	PAPER NUMBER
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1651

DATE MAILED: 01/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/786,278	<b>Applicant(s)</b> PARK ET AL.	
	<b>Examiner</b> Francisco C. Prats	<b>Art Unit</b> 1651	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \* c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>12-17-04;10-29-01</u> . | 6) <input type="checkbox"/> Other: ____.  |

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**DETAILED ACTION**

Claims 1-9 are presented for examination.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, formulae 1 and 2 in claim 1 contain handwritten designations for the various positions on the ruthenium complexes. Several of these handwritten designations are not legible, thereby rendering claim 1 and its dependents indefinite under § 112, second paragraph. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 5-7 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Persson et al (J. Am. Chem. Soc. 121:1645-1650 (1999)).

Persson describes the ruthenium/enzyme catalyzed resolution of secondary alcohols using the ruthenium complex of applicant's formula (3) (see page 1646, Persson's structure 2), and the lipase B from *Candida antarctica*, as well as the claimed acyl donor, the components being used at the claimed molar ratios (see, e.g., page 1650, second paragraph, left column), hydride being donated by the alcohol. Persson also discloses that the reactions were run in the presence of ketones, including ketones corresponding to the racemized alcohol, i.e., acetophenone (see schemes 2 and 3 at the top of page 1646), and benzophenone. See final paragraph, page 1647, left column ("we thought that benzophenone would work as a hydrogen acceptor in the catalytic cycle"). Both acetophenone and benzophenone are ketones falling within the structures recited in the claims for the ketones to be used in the reaction. A holding of anticipation over the cited claims is therefore required.

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***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 2 and 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Menashe et al (J. Organometall. Chem. 514(1):97-102 (1996)) in view of Persson et al (J. Am. Chem. Soc. 121:1645-1650 (1999)).

Menashe et al disclose the ruthenium-catalyzed production of secondary alcohols from ketones having the claimed formulae, in the presence of formic acid as the hydride donor. See, e.g., abstract. Menashe differs from the claims in failing to resolve those alcohols into an optically active product by enzyme.

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However, as discussed above, Persson describes the ruthenium/enzyme catalyzed resolution of secondary alcohols using the ruthenium complex of applicant's formula (3), the lipase B from *Candida antarctica*, as well as the claimed acyl donor, in the presence of hydride being donated by the alcohol and ketones. Thus, the artisan of ordinary skill, recognizing from Persson that alcohols produced by Menashe's formic acid-using ruthenium-catalyzed methods would have been suitably resolved by a lipase enzyme, clearly would have been motivated to have added Persson's lipase to Menashe's reaction mixture so as to produce optically active products, said optically active products being taught by Persson to be desirable.

Lastly, note that the use of a known lipase in the process of Persson, including the *Pseudomonas cepacia* lipase, would have been considered an obvious substitution of one known lipase for another, the artisan of ordinary skill reasonably expecting enzymes having the same catalytic activity to function equivalently in the process of Persson.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple

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assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-9 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-12 of U.S. Patent No. 6,753,443 in view of Persson et al (J. Am. Chem. Soc. 121:1645-1650 (1999)).

Specifically, the claims under examination differ from the patented claims in that the claims under examination use a ketone as the starting material rather than a racemic alcohol. However, Persson clearly discloses that the ruthenium/lipase-catalyzed resolution of racemic alcohols proceeds via a ketone intermediate. See page 1649, Scheme 4, and first paragraph under "Mechanistic Considerations." Thus, although the patented claims do not recite mixing and reacting a ketone, as recited in the claims under examination herein, the patented claims inherently contain a step of mixing and reacting a ketone, as Persson's disclosure makes obvious.

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Moreover, Persson discloses that omission of ketone from the reaction mixture reduces yield using certain substrates. See final paragraph, left column, page 1647 ("by gradually decreasing the amount of ketone, the yield of (R)-4 went down"). Thus, one of ordinary skill viewing the patented claims clearly would have been motivated to have added ketone to the process recited in the patented claims, as recited in the claims under examination. A terminal disclaimer is therefore clearly required.

No claims are allowed.

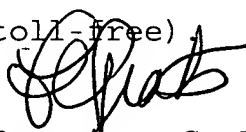
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Francisco C. Prats whose telephone number is 571-272-0921. The examiner can normally be reached on Monday through Friday, with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Wityshyn can be reached on 571-272-0926. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Francisco C. Prats  
Primary Examiner  
Art Unit 1651

FCP